

REPORT

ON THE

AGRICULTURAL INSTRUCTION ACT

1919-1920

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

— THOMAS MULVEY

PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1920

CONTENTS.

	PAGE.
INTRODUCTION..	3
The Intention and Purpose of the Grant..	3
Allotment of the Grant of 1919-20..	4
INSTRUCTION AND DEMONSTRATION..	7
Agricultural Representatives..	8
Other leading forms of Instructional Propaganda..	9
Ontario..	9
Quebec..	11
Manitoba..	12
Saskatchewan..	13
Alberta..	14
British Columbia..	15
Nova Scotia..	16
New Brunswick..	16
Women's Institutes..	16
COLLEGES AND SCHOOLS OF AGRICULTURE..	18
Total Allotment, 1912-13 to 1919-20..	19
Schools of Agriculture in Alberta and Ontario..	20
ELEMENTARY AGRICULTURAL EDUCATION..	20
General Review of the Situation..	20
Junior Extension Work, Including School and Home Gardens, Boys' and Girls' Clubs and School Fairs..	24
FINANCIAL STATEMENTS..	32
Statements, by Provinces, of the Expenditure of the Grant of 1919-20.. . .	32
Grants to Veterinary Colleges..	39

REPORT

ON THE

AGRICULTURAL INSTRUCTION ACT

FOR THE FISCAL YEAR 1919-20

Tabled in pursuance of Section 8 of the above-named Act.

INTRODUCTION.

THE INTENTION AND PURPOSE OF THE GRANT.

Under the Agricultural Instruction Act, a Dominion grant of \$1,100,000 is divided annually between the provinces for the purpose of aiding and advancing the farming industry of Canada. The grants to the individual provinces for the year covered by the report were as follows:—

Alberta.. . . .	\$ 66,965 62
British Columbia.. . . .	69,199 06
Manitoba.. . . .	77,113 11
New Brunswick.. . . .	64,110 80
Nova Scotia.. . . .	81,716 69
Ontario.. . . .	336,303 26
Prince Edward Island	31,749 22
Quebec.. . . .	271,113 76
Saskatchewan.. . . .	81,728 48
Veterinary Colleges.. . . .	20,000 00
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	\$1,100,000 00

The grant is intended to supplement provincial appropriations and is made with a view to enabling the provinces, by means of the additional funds thus placed at their disposal, to finance and carry out instructional efforts in the interest of agriculture in a more extended and comprehensive manner than would otherwise be possible.

No narrow boundaries are set to limit unduly the application of the grant. The general requirements of the Act are that the moneys shall be expended in promoting education, instruction and demonstration. The precise methods of application are left to the provinces to determine in accordance with their individual needs. Consequently great latitude is allowed as to the nature of the undertakings to receive assistance.

The founders of the policy which the Act brings into practice believed that, in order to promote rural effectiveness, better farming methods were needed in the first place; second, that more adequate educational facilities suited to rural life should be provided, and third, that country home environment should be improved and made more congenial. The promotion of these objectives would, it was believed, result in a greater measure of prosperity and contentment for the farming community.

11 GEORGE V, A. 1921

The first phase of the project contemplated the conveyance of up-to-date information to the adult as to the best methods and practices connected with farming. All practical forms of extension and demonstration were contemplated under this head. The second phase had to do with the education of country youth. It presents two aspects, the scholastic and the vocational. In order to bring the scholastic aspect more into line with country environment, elementary agricultural teaching was introduced. The concomitants of this movement were the school and home garden, boys' and girls' club work and the school fair. For the development of these undertakings and for the preparatory training of teachers the grant is largely responsible. The development of the vocational phase includes the increased efficiency of colleges of agriculture, and the provision in certain provinces of vocational agricultural schools of a lower grade than the colleges, together with special departments in high schools devoted to the requirements of agricultural students. With the placing of adequate educational facilities within the easy reach of all country boys and girls, which is the goal aimed at, comes the assurance of permanent benefit to agriculture and to those engaged in it.

For the advancement of country life the grant also makes provision. Chiefly through the Women's Institutes, instruction is provided in household science, domestic art, sanitation, home nursing and similar subjects. The fact is recognized that the family and social life of the rural population possess an importance not to be lost sight of. Along with the development of agriculture as an economic pursuit must go its development as a mode of life. With the promotion of better farming, should go hand in hand efforts for the advancement of education, co-operation, family welfare, health and moral ideals, these working together for the highest type of rural citizenship.

The schedules of allotment of the grant of 1919-20 are given below, the same having been incorporated in the agreements with the provinces for the year in question:—

ALLOTMENT OF THE GRANT OF 1919-20

PRINCE EDWARD ISLAND

Agricultural Buildings—

Equipment and maintenance.. . . .	\$ 1,725 00
Director and agricultural representatives.. . . .	5,800 00
Short courses.. . . .	300 00
Drainage and soils.. . . .	1,300 00
Live stock and dairying.. . . .	3,900 00
Poultry, horticulture, bee-keeping, and co-operative marketing..	1,700 00
Women's Institutes.. . . .	3,510 00
Agricultural instruction in public and high schools, training of teachers, allowances, grants, maintenance of Rural Science Department, Prince of Wales College.. . . .	11,500 00
Contingencies, including clerical assistance.. . . .	2,014 22
	<hr/>
	\$31,749 22

NOVA SCOTIA

COLLEGE OF AGRICULTURE

1. Science building—Interest and Sinking Fund.. . . .	\$ 8,000 00
2. Salaries and maintenance.. . . .	23,000 00

DEMONSTRATION AND INSTRUCTION.

3. Agricultural representatives.. . . .	12,000 00
4. Short courses.. . . .	1,000 00
5. Dairying.. . . .	5,618 54
6. Poultry.. . . .	1,500 00
7. Bee-keeping.. . . .	71 30
8. Drainage and soil survey.. . . .	1,600 00
9. Soils and fertilizers.. . . .	2,118 55
10. Field crops.. . . .	1,191 61
11. Fruit growing.. . . .	2,000 00
12. Women's work.. . . .	2,500 00
13. Entomological work.. . . .	8,500 00

SESSIONAL PAPER No. 15a

ELEMENTARY AGRICULTURAL EDUCATION

14. Agricultural instruction in Public, High, and Normal schools, teacher training, grants and allowances.. . . .	10,000 00
15. School children's exhibits and competitions.. . . .	2,000 00
16. Contingencies.. . . .	616 69
	<hr/>
	\$81,716 69

NEW BRUNSWICK

1. Agricultural schools—Salaries and maintenance.. . . .	\$ 1,500 00
2. Agricultural representatives.. . . .	12,000 00
3. Bee-keeping.. . . .	2,400 00
4. Soils and drainage.. . . .	5,000 00
5. Horticulture.. . . .	5,200 00
6. Live stock.. . . .	4,500 00
7. Dairying.. . . .	5,210 80
8. Poultry.. . . .	3,800 00
9. Entomology.. . . .	900 00
10. Agricultural societies.. . . .	2,800 00
11. Women's Institutes.. . . .	6,000 00
12. Elementary agricultural education—Agricultural instruction in Public, High and Normal schools, household science, teacher training, grants and allowances.. . . .	14,800 00
	<hr/>
	\$64,110 80

QUEBEC

COLLEGES AND SCHOOLS OF AGRICULTURE

1. Grants and allowances—Macdonald College, School of Agriculture, Ste-Anne-de-la-Pocatière, Oka Institute	\$75,000 00
2. School of Veterinary Science, building and extension.. . .	5,000 00

INSTRUCTION AND DEMONSTRATION.

3. Animal husbandry.. . . .	9,000 00
4. Poultry husbandry.. . . .	18,000 00
5. Horticultural and entomological work.. . . .	31,000 00
6. Experimental and demonstration orchards.. . . .	4,000 00
7. Dairying, educational work in cheese and butter-making..	5,000 00
8. Agricultural representatives.. . . .	69,000 00
9. Seed selection, clover plots and demonstrations.. . . .	9,000 00
10. Bee-keeping—educational work	7,000 00
11. Drainage.. . . .	6,000 00
12. Maple industry—Maintenance of schools and allowances to students.. . . .	4,000 00
13. Short courses and lectures.. . . .	9,113 76

ELEMENTARY AGRICULTURAL EDUCATION.

14. To promote the teaching of agriculture in academies, rural and Normal schools, teacher training, school gardens	8,000 00
15. To promote the teaching of domestic science in academies and Normal schools—Grants, lectures and inspection..	10,000 00
16. School children's exhibits.. . . .	2,000 00
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	\$271,113 76

ONTARIO

AGRICULTURAL COLLEGES AND SCHOOLS

1. Ontario Agricultural College—		
(a) Buildings, equipment and furnishings ..	\$40,000 00	
(b) Salaries and expenses, additions to staff maintenance.. . . .	15,000 00	
	<hr/>	\$55,000 00
2. Agricultural School and Farm—		
(a) Capital expenditure.. . . .	45,000 00	
(b) Maintenance, purchase of stock, machinery repairs, services, expenses and equipment.. . . .	15,000 00	
	<hr/>	60,000 00

11 GEORGE V, A. 1921

INSTRUCTION AND DEMONSTRATION

3. Agricultural representatives, including clerical and other assistance in connection with the administration..	126,000 00
4. Extension work in household science in rural communities	1,500 00
5. Co-operation and markets, educational work in connection with the marketing of farm products, including organization of co-operative societies.. . . .	10,700 00
6. Demonstration and instruction in vegetable growing.. .	12,531 92
7. Stock and seed judging short courses and Institute lectures..	2,000 00
8. Women's Institute work, including courses in cooking, sewing, etc..	5,000 00
9. Short courses for fall fair, field crop and poultry judges, including travelling and living expenses.. . . .	3,568 08
10. Lectures on horticulture.. . . .	500 00
11. Demonstrations in growing and handling fruit.. . . .	1,803 26
12. Demonstrations with vegetables and hardy fruits in New Ontario.. . . .	5,300 00
13. Vineland Horticultural Experiment Station experimental work.. . . .	2,000 00
14. Demonstration work on soils.. . . .	5,900 00
15. Bee-keeping.. . . .	1,000 00
16. Instruction and special educational work in growing and handling corn.. . . .	3,500 00

ELEMENTARY AGRICULTURAL EDUCATION

17. To encourage the teaching and organization of classes in agriculture; and of household science and manual training as applied to work on the farm. To provide for teaching, inspection, services and equipment in connection with such classes in High, Public, Separate, Continuation and Normal schools and in universities, in summer courses and other courses and educational gatherings; for travelling and living expenses in connection with short courses or other educational gatherings. To be available for grants to boards, teachers, and inspectors and to be paid on the recommendation of the Department of Education.. . . .	40,000 00
Total.. . . .	\$336,303 26

MANITOBA

Agricultural Representatives.. . . .	\$20,113 11
Dairy Work.. . . .	3,000 00
Boys' and Girls' Clubs.. . . .	13,000 00
Extension Schools.. . . .	20,000 00
Home Economics.. . . .	13,000 00
Bee-keeping.. . . .	1,000 00
Killarney Demonstration Farm.. . . .	4,000 00
Soil Analysis and Survey.. . . .	1,000 00
Contingencies and Miscellaneous	2,000 00
	<hr/>
	\$77,113 11

SASKATCHEWAN

COLLEGE OF AGRICULTURE

1. Staff salaries—Research and extension services.. . . .	\$21,476 16
2. Women's work—Homemakers' Clubs.. . . .	5,500 00

INSTRUCTION AND DEMONSTRATION.

3. Co-operation and marketing.. . . .	7,000 00
4. Animal husbandry.. . . .	3,000 00
5. Dairying.. . . .	3,000 00
6. Field husbandry.. . . .	5,000 00
7. Demonstration trains.. . . .	7,000 00
8. Agricultural representatives.. . . .	1,476 16
9. Veterinary short course.. . . .	500 00

SESSIONAL PAPER No. 15a

ELEMENTARY AGRICULTURAL EDUCATION.

10. Agricultural instruction in Public, High, and Normal schools, household science; training of teachers; nature study..	24,476 16
11. School fairs..	2,500 00
12. Agricultural scholarships—Post graduate course in agriculture..	800 00
	<hr/>
	\$81,728 48

ALBERTA

Schools of Agriculture..	\$38,000 00
Special work placing live stock on farms under Live Stock Encouragement Act..	7,400 00
Women's work..	9,000 00
Agricultural representatives..	10,000 00
Poultry and egg marketing..	2,500 00
Miscellaneous..	65 62
	<hr/>
	\$66,965 62

BRITISH COLUMBIA

Dry farm demonstration stations and field crops..	\$ 3,000 00
Seed work..	1,000 00
Silo demonstration work..	2,000 00
Horticultural demonstrations and competitions..	2,000 00
Fruit packing and pruning schools..	2,000 00
Poultry..	1,000 00
Dairying and cow testing..	8,000 00
Bee-keeping..	7,000 00
Boys' and Girls' Clubs..	1,000 00
Agricultural Journal and Publications Branch..	6,000 00
Pathological and entomological investigations and research.. . .	4,000 00
Miscellaneous..	199 06
Agricultural instruction in Public, High and Normal schools, training of teachers, grants..	20,000 00
University of British Columbia: Investigation and extension..	12,000 00
	<hr/>
	\$69,199 06

INSTRUCTION AND DEMONSTRATION

Between sixty and seventy per cent of the Agricultural Instruction grant is expended by provincial Departments of Agriculture on what is classed as demonstration and instruction work. This includes extension work of all kinds designed to acquaint the farmer with the latest results of experiment and scientific research and the best methods of applying same to the work of the farm in order that the general standard of efficiency may be raised and the worker receive greater returns for his labour. It includes instruction chiefly for adults but also extension work for the juvenile portion of the rural community, where such work is not under the jurisdiction of the educational authorities and not directly correlated with the work of the schools.

The allocation to undertakings of this class given by provinces, and including propaganda in the interest of women of the rural districts was as follows:—

Ontario..	\$181,303
Quebec..	171,113
Manitoba..	77,113
Saskatchewan..	33,300
Alberta..	29,000
British Columbia..	36,200
Nova Scotia..	38,717
New Brunswick..	48,810
Prince Edward Island..	28,514
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	\$644,070

11 GEORGE V, A. 1921

It should be noted that in the provinces of Quebec, Nova Scotia, Saskatchewan and Alberta the allotment to colleges and schools of agriculture assists materially the extension work of those institutions. While the proportion cannot be definitely stated, the total sum devoted to instruction and demonstration is somewhat in excess of the figures given above.

It was laid down as a principle at the inception of the grant that under the general heading of instruction and demonstration the grant might be expended on any or all of the following undertakings:—

“To provide for the salaries and expenses of provincial officials or agents whose duty it should be to direct, instruct or inspect along any line of agricultural instruction, including located county or district agricultural representatives, demonstrators or instructors, and travelling instructors.

“To provide for demonstrations tending to encourage and assist the rural population to better living and more profitable methods of work.” This included the organization of Women’s Institutes and the giving of instruction to women in household science or any line of work connected with rural life or any agricultural pursuit.

“To provide short courses in all lines of agricultural work.”

The various lines of work in the sphere of instruction and demonstration to which specific allocations were made for the year under consideration are given in the schedules of allotment for the respective provinces. A brief review of the leading activities, which are in the main similar to those of previous years, is given by provinces.

AGRICULTURAL REPRESENTATIVES

Forty-five per cent of the total allotment under instruction and demonstration is absorbed in connection with the agricultural representative organization.

The distribution of the grant for this purpose was as follows:—

Ontario.. . . .	\$126,000
Quebec.. . . .	69,000
Manitoba.. . . .	20,113
Saskatchewan.. . . .	1,500
Alberta.. . . .	10,000
Nova Scotia.. . . .	12,000
New Brunswick.. . . .	12,000
Prince Edward Island.. . . .	5,800
	<hr/>
	\$256,413

Ontario has a resident departmental representative in almost every country and district in the province. There were some forty-five men acting in this capacity during the year. They form the chief extension medium of the department. The cost of the service is met from the federal grant up to the extent of the appropriation and the balance from provincial funds.

In the province of Quebec there were during the year thirty agricultural representatives’ offices in operation. Special attention is given to the supervision of societies and clubs co-operatively owning breeding animals, to the establishment of co-operative societies and to the development of school and home gardens and school fairs. The expenditure is met by the grant.

In New Brunswick three permanent representatives and three assistants are employed, and the entire work is financed by the grant. The work of the year included sixteen sheep-dipping demonstrations, numerous farmers’ meetings, short courses for junior farmers, potato spraying demonstrations, judging field crop competitions, judging at fairs and the organization of poultry clubs and fairs.

SESSIONAL PAPER No. 15a

British Columbia employs one district agriculturist who functions to a certain extent as an agricultural representative.

Prince Edward Island has an agricultural representative and a director of agricultural instruction who undertakes work of a nature similar to that of a representative.

Manitoba during 1919 had seven departmental representatives stationed in different parts of the province. Their work has to do mainly with boys' and girls' clubs, seed exchanges, live stock exchanges, field demonstrations and the control of insect pests. Part of the expenditure is met by the grant and part by the local community.

Alberta had four representatives at work during the year, located at Edmonton, Stony Plain, Sedgewick, and Grande Prairie, while an extension man for each of the three schools of agriculture undertook work in connection with the organization and conduct of poultry, calf and pig clubs and school fairs.

In the province of Nova Scotia all the agricultural representative work is paid for out of the federal appropriation. Five men were engaged in the work and two others in supplementary work. The service was considerably broken up during the year owing to resignations, but it is hoped soon to place it on a more permanent basis.

Following is an account of the principal activities coming under the head of instruction and demonstration, apart from the work of the agricultural representatives.

OTHER FORMS OF INSTRUCTIONAL PROPAGANDA

ONTARIO

Co-operation and Marketing

The marked development of co-operative organization that has taken place in Ontario may be attributed in no small degree to the efforts of the Ontario Department of Agriculture in this behalf, assisted by the Agricultural Instruction grant.

Five years ago, there were practically no live-stock shipping clubs in the province; to-day there are between three and four hundred such organizations shipping co-operatively, to the value of one hundred to two hundred thousand dollars annually. It is estimated that probably one-third of all shipments going through the stockyards are club shipments, and it is regarded as quite possible that within the next few years eighty-five per cent of the live stock in Ontario will be shipped in this way.

Considerable progress has also been made in the co-operative marketing of eggs and poultry. Better methods in the handling of the business of egg circles have been introduced with benefit both to the producer and consumer. A development of the work has been the establishment of stations at which the eggs collected by a number of circles are graded and the producer is paid according to grade.

Apple-orcharding in the province which is more or less of a side-line of general farming, has suffered on account of the prevailing shortage of help, and outside of the regular apple-growing districts, the apple growers' co-operative associations have not been very active. The grape growers of the Niagara district have recently formed a selling organization to dispose of their output.

A development during the year in connection with co-operative marketing was the formation of a central company for the manufacture and marketing of Ontario cheese. This company undertakes either to take over the local cheese factories or to act as a marketing agent for local factories. An auction cheese market has been opened in Montreal and reports would indicate that this radical change in the marketing of Ontario cheese will become permanent.

The co-operative marketing of wool was continued last year through the Ontario Sheep Breeders' Association as previously. The Canadian Co-operative Wool Growers, Limited, marketed a total of about 4,000,000 pounds, and of this amount Ontario

11 GEORGE V, A. 1921

supplied 775,000 pounds. It is estimated that the total production of Ontario is about 2,500,000 pounds annually. Thus, 31 per cent of Ontario's wool was marketed co-operatively last year.

A large proportion of the co-operative work in the province is carried on through unincorporated local farmers' clubs, of which there are some twelve or thirteen hundred in the province. The great majority of these are affiliated with the United Farmers Co-operative Company, which acts as a wholesale house for these clubs. The amount of business transacted by some of these local clubs is remarkable and is proving much more valuable since many of these clubs are taking up co-operative marketing rather than confining their efforts solely to buying supplies.

With the increase of business and the consequent larger financial transactions, an increasing number of clubs have become incorporated under the co-operative section of the Ontario Companies Act. During the year there were eighty incorporations, either as share or non-share co-operative companies. One such organization, for instance, handling live stock, feeds, grains and other commodities and buying supplies, is doing business which averages about \$1,000 per day.

A number of instances are observed of local organizations purchasing the local elevator, erecting a warehouse or seed-cleaning plant or conducting similar undertakings. The work being done by the provincial department in connection with better seed, more particularly potato seed, has brought about the organization of a number of potato seed associations properly equipped to handle the business.

That the co-operative idea is permeating Ontario agriculture is evidenced by the numerous instances of local co-operative endeavour which a few years ago would have been considered as outstanding. The older associations have enlarged their operations and the newer associations are entering on their work on a more sound and substantial business basis. The smaller associations are uniting their efforts through the larger organizations so that an increasing number of the functions of the middleman are being taken over by the co-operatives.

Work of the Vegetable Specialist

Comparatively little work has been done in the past by scientists looking to the control of insects and fungous diseases injurious to vegetable crops. These pests are becoming increasingly numerous, particularly in the case of the cabbage-root maggot, cabbage aphid, the tarnished plant bug, onion thrip and onion maggot, which threaten important branches of the industry. Demonstrations of control methods for these pests were conducted at central points in market-gardening districts and were well attended by interested persons. Investigations are being made with a view to securing cheaper remedies than those now in use.

A beginning was made during the year in conducting fertilizer experiments in order to demonstrate the value of high-grade chemical fertilizers of known composition and in suitable combination. Lecture courses in commercial vegetable-growing were conducted at various points, and talks given on garden topics at horticultural society meetings and school children's gatherings. At the request of the Soldiers' Aid Commission a lecture course on small holdings was held for the benefit of ex-soldiers at the Guelph Military Hospital.

Soil Survey

A survey of the soils of Ontario by the Chemistry Department of the Ontario Agricultural College has been under way for the past six years. The purpose of the survey is to classify and map out the types of soil as a foundation on which to base suitable systems for maintaining or restoring fertility. Beside making field surveys, physical and chemical analyses have been made. Following this, experiments with

SESSIONAL PAPER No. 15a

crops, rotation and fertilizers are carried on either by the farmers themselves under direction, or on rented plots where more detailed work is necessary. It is expected that as a result of this work a system will be developed for replenishing fertility. A bulletin is being prepared embodying the results of the work, which has been financed from the federal grant.

QUEBEC

Demonstration Orchards

To demonstrate scientific methods of fruit-growing, the Provincial Department of Agriculture undertook, some years ago, to establish supervised orchards in fruit-producing centres, and also in other districts where conditions of soil, climate and markets were favourable. These demonstration orchards, now numbering 103 (38 for large fruits and 65 for small fruits) are provided with every necessity for their establishment and maintenance—trees, shrubs, manures, fertilizers, pruning, grafting, spraying material, etc., the owners following the instructions given by the department.

The results so far obtained from these orchards, most of which were neglected at the beginning, are sufficient to prove the correctness of the methods adopted and the possibility of making good profits out of well managed fruit culture and to encourage the development of the industry.

To promote the industry, over 90,000 fruit trees were secured and sold at low prices to association members during the last three years, the planting being done under supervision. Assistance is also given to enable associations to secure spraying materials at reduced cost. During the past two years 6,000 fruit trees have been distributed as premiums to pupils of rural schools. A great number of lectures, demonstrations and visits have been made throughout the province by the department's inspectors. In an endeavour to open up profitable markets, fruit from the demonstration orchards, specially packed, has been shipped to large consumers in France with encouraging results. With such facilities provided to the growers in the leading fruit-growing centres, in addition to the free use of a cold storage and grading machines, it is hoped that fruit culture and the fruit industry will make a degree of development in the province which may be expected from the natural advantages of soil and climate.

Entomological Work

Entomological work in Quebec, the cost of which is met by the grant, is under the supervision of a provincial entomologist, who is associated with the Horticultural Branch of the Department of Agriculture. The work consists of propaganda in regard to the control of insect pests and plant diseases, the inspection of nurseries, and the conducting of spraying experiments in connection with the Dominion entomological service. A number of publications have been distributed. Investigational work of a scientific nature in relation to certain injurious fruit insects is being carried on at Macdonald College.

Dairying

At the Dairy School at St. Hyacinthe, Quebec, six courses of instruction were provided to qualify dairy instructors and inspectors, cheese and buttermakers, milk testers and others engaged in the dairy business. Of the persons attending 174 were granted certificates as expert milk testers, while 70 buttermakers and 70 cheesemakers were granted diplomas. There are now in the province 1,061 makers certified as experts in milk testing.

To promote the butter and cheese industries a compulsory system of inspection of all factories is provided for. To this work the grant has also contributed. Each of the 1,926 factories in the province received on an average six visits during the season. Those in charge of this work report considerable improvement in the quality and uniformity of the output.

11 GEORGE V, A. 1921

Crop Competitions

Standing crop competitions and seed grain fairs held by agricultural associations in the province of Quebec are the medium employed for giving instruction in regard to better seed and its production by selection and the use of the fanning-mill. The exhibits are judged by the department's representatives. The best local exhibits are sent to the seed grain exhibition held annually at Quebec. The standing crop competitions held during the year numbered 174. 2,656 persons taking part.

Other Demonstrations

Sixty-one demonstration fields were operated in 1919 in the various districts of the province of Quebec. They included corn for ensilage, beets, swede turnips, clover for seed, beans, wheat, barley, oats, corn, potatoes, alfalfa, and carrots.

Two clover hullers demonstrated the production of clover seed in twenty-one parishes. Demonstrations are given free of charge wherever there are less than ten farmers in a parish who have clover to thresh, provided there is not a clover huller already in the parish.

Bee-keeping

Educational work in connection with bee-keeping in the province of Quebec is carried on through the medium of apiary inspectors, who visit the bee-keepers of the province and give instruction as to up-to-date methods and the treatment of foul brood. Eighteen inspectors operated. The number of apiaries visited was 4,647. Since 1911, the number of apiaries has doubled and the honey output has trebled, indicating that good progress is being made under this method of instruction.

Drainage

Quebec encourages the underdrainage of arable lands in two ways, first by making surveys and plans, and, second, by conducting demonstrations. When an application is received from a farmer who wants to have his land drained, an instructor is sent out, who makes a survey of the farm and prepares the necessary topographical maps. This plan is explained and all the information necessary for the proper carrying out of the work is given on the spot to the farmer. The services of the instructor are free of charge, but the farmer must board him during his work and give him the help which he may require. Five or six instructors are employed in making surveys and in carrying on ditching-machine demonstrations.

MANITOBA

Dairying

The possibilities of Manitoba for the development of the dairy industry led to the establishment, three years ago, of a Dairy Branch for its assistance and encouragement. In co-operation with the Extension Service the branch furnishes speakers for meetings and short courses on dairy subjects. Two men devote the whole of their time to lecture work during the winter months, while in the summer they carry on creamery inspection, visit farmers and discuss dairy methods.

Poultry Work

A vigorous line of poultry encouragement work is conducted throughout the province. Poultry lectures are given at meetings of agricultural societies, women's institutes, boys' and girls' clubs, Normal school classes, and other gatherings. Incubators are demonstrated in schools, poultry plants are inspected, non-layers culled, and flocks scored as to quality and management. During the year, 400 flocks were inspected, totalling 15,000 birds. The entire time of one man is spent on the work, with an assistant during the winter months.

SESSIONAL PAPER No. 15a

Killarney Demonstration Farm

The Killarney Farm was established under the Agricultural Instruction Act to demonstrate fruit-growing and general farm produce. It functions somewhat differently from the Dominion Experimental Farms at Brandon and Morden, dealing with more intimate and local conditions. It is hoped through this farm and others that the provincial department is establishing to secure accurate data as to the cost of production and to conduct them on a pay-for-upkeep basis, besides making them centres of contact between the department and the local community.

Agricultural Classes

Gas-engine schools to the number of forty were held at local points, the attendance ranging from thirty to fifty. Schools of this type continue to be very popular.

Two-day classes in agriculture were held at seventy places, the afternoon sessions being devoted to farming and the evening to more general topics. At these gatherings the University of Manitoba, the Social Service and the Agricultural College co-operated. Motion pictures and lantern slides were made use of.

Agricultural Societies and Exhibitions

Much effective extension work was carried out through the medium of the agricultural societies. This included the providing of judges for summer fairs, seed fairs, poultry shows, ploughing matches, standing field crop competitions and horticultural shows. In a number of cases live-stock judging and canning competitions were directed in connection with the summer fair. The Extension Service co-operated with other branches of the provincial department in arranging exhibits at the Winnipeg and Brandon Exhibitions and at the International Soil Products Exhibition.

SASKATCHEWAN

Agricultural instruction and demonstration in Saskatchewan comprises (1) the extension work of the College of Agriculture, and (2) the special activities of the Department of Agriculture in connection with co-operation and marketing, animal husbandry, field husbandry and dairying.

The cost of the college extension work is met largely from the allotment to the College of Agriculture. In its performance such mediums are employed as agricultural societies, grain growers' associations and women's institutes. Short courses of a general agricultural nature are held during the winter at various points in the province. A special course in farm tractor operation was put on at a few outside points and a course was held each month during December, January and February at the university. Short courses for farm women were carried out which included instruction to the wives of soldiers who are taking advantage of the Soldier Settlement scheme.

Better Farming Train

Seed fairs, standing field competitions, ploughing matches, poultry shows, and school exhibitions gave opportunities for bringing the college work to the people. The Better Farming Train was operated, in co-operation with the Department of Agriculture and the Canadian Pacific Railway, for five weeks in May and June along Canadian Pacific Railway lines southwest and west of Moosejaw. The train was fully equipped for giving instruction in field husbandry, animal husbandry, poultry, dairying, farm mechanics, household science, natural history, child welfare, with a play car for children and a nursery for babies. The attendance totalled 31,438 persons, comprising 10,444 men, 6,688 women, and 14,306 children.

11 GEORGE V, A. 1921

In the interest of dairying, a dairy demonstration car was operated on certain lines of the Canadian National Railway in the spring of 1920. For this undertaking the Provincial Dairy Branch co-operated with the College of Agriculture. Herd management, feeding for milk production, individual testing and the best methods of handling and marketing dairy products were among the subjects dealt with, the lectures being illustrated by motion pictures and lantern slides.

Co-operation and Marketing

Agricultural co-operative associations are under the supervision of the Co-operation and Markets Branch of the provincial department. This branch was established in 1914, the Agricultural Instruction grant being employed in its maintenance. Since that time co-operative associations of the province have increased very rapidly in number. In 1914, 102 associations with 2,850 shareholders reported to the branch. In 1918 the number had grown to 329 associations with a membership of 15,123, while in 1919, 406 associations reported. The total business turnover of the associations in 1914 was \$281,355, and in 1918, \$5,278,166.

Noxious Weed Control

During the summer months, a number of field representatives were employed under the direction of the Weeds and Seed Commissioner. Their principal duties were to visit and instruct municipal officers in matters relating to the eradication and control of noxious weeds. During July short courses were held at several points in the province and at these meetings the field representatives met the municipal weed inspectors and farmers and discussed tillage matters and other factors affecting the weed situation. Particular attention was paid to the identification of weeds recently introduced, in an effort to prevent their further spread.

The field representatives also inspect plots and fields for members of the Canadian Seed Growers' Association. These fields were examined and the crops scored, the owners being advised in regard to their individual problems.

ALBERTA

The greater part of the extension work in Alberta is done from the agricultural schools and by the teachers of the schools between teaching terms assisted by departmental officials. In consequence of this arrangement, the allotment to the schools of agriculture may be regarded as financing to some extent instruction and demonstration work. The grant provides, however, for several instruction projects carried out by the department proper. Among them are the poultry and egg-marketing project, and special work connecting with the placing of live stock on farms.

Poultry and Egg Marketing

In co-operation with the Poultry Division of the Dominion Department an egg-marketing service has been established to enable farmers to sell their eggs on a quality and cash basis rather than through the country store, the object being to stimulate the industry by securing a better return for the product. An important part of the work of the poultry marketing services is the education of poultry-raisers in proper methods of breeding and feeding of poultry and caring for poultry products.

In connection with the placing of live stock on farms, the grant has contributed towards the salaries and expenses of the travelling inspectors and instructors employed under the Live Stock Encouragement Act, which provides for loans to farmers for the purchase of live stock.

SESSIONAL PAPER No. 15a

BRITISH COLUMBIA

In the province of British Columbia the instruction work carried on by the Department of Agriculture during the year related to general agriculture, live stock, dairying, horticulture, egg production, injurious insects and diseases of plants and bee-keeping.

In connection with the co-operative marketing of wool, successful efforts were made to promote organization, the result being that the British Columbia Wool Growers' Association handled for the producers nearly twice as much wool as in the previous year.

The department also assisted the British Columbia Stock Breeders' Association in organizing a bull sale and a sale of sheep and hogs.

The demonstration stations at Quilchena and 105 Mile, in the dry-farming districts, continued to operate during the year. The Quilchena farm is devoted chiefly to sheep ranching, while at 105 Mile, crop production is being demonstrated.

Silo Demonstration

Demonstrations in the building and filling of silos are showing important results, a large number having been put up as the outcome of the department's efforts. During the year ten silos were built under department supervision, and several demonstrations in silo filling were carried out. Many farmers are building a second silo, and many fruit growers are finding it advantageous to adopt dairying as a side line because of the value of the manure output as a fertilizer.

Other Instructional Activities

Two additional cow-testing associations were established during the year, making a total of six. The department contributes to each supervisor's salary besides equipping the association at its inception, and supplying testers.

Boys' and girls' club competitions in poultry keeping were again organized, twenty-two such competitions being conducted, with 181 participants.

The International Egg Laying contest, in which the province has now participated for the eighth year, was conducted in co-operation with the Provincial Poultry Association, which provided the prizes, diplomas and other awards, while the grant was employed in meeting operating expenses.

The horticultural work assisted by the grant consisted of personal visits to fruit growers for advice and demonstration, institute lectures, judging at fairs, the conducting of a strawberry demonstration plot, experiments with spraying materials and methods and with orchard cover crops. The inspection of orchards for insect pests was carried on and information given as to methods of control and eradication.

In the division of plant pathology and entomology the major subjects of the season's work were the study of the life-history and control of the onion and cabbage root maggots. Educational exhibits of insect specimens were prepared and displayed at fairs and exhibitions.

The apiary inspection work necessitated an increase of three men on the inspection staff owing to the extension of the industry, its more stringent regulation, and the increasing demand for instruction. Much good work is being done in combatting foul brood and in educating and stimulating bee-keepers to adopt proper methods, thereby raising the standard of bee-keeping and increasing production. The exhibits at the Vancouver and New Westminster exhibitions were the best ever made in the province.

The cost of the Agricultural Journal and of various bulletins is met from the grant. Farming literature was supplied to a large number of returned men who are taking courses of study in agriculture, and, also, on request, to school teachers interested in agricultural work.

11 GEORGE V, A. 1921

NOVA SCOTIA

The instruction and demonstration work of the province of Nova Scotia apart from that of the agricultural representatives relates to dairying, fruit-growing, poultry and bee-keeping, drainage, soils and fertilizers, field crops, short courses, and women's institutes. The grant is applied for the most part on the salaries of the officers engaged therein and in meeting incidental expenses.

Five short courses were conducted during the year, all being largely attended.

Soil and fertilizer demonstrations included the operation of a portable limestone crusher, as in several previous years, in order to demonstrate the value of liming soils by this method. This has resulted in three crushers being established in parts of the province where demonstrations were given. Demonstrations with fertilizers and manures were also conducted at numerous points.

The work in horticulture consisted as in previous years of demonstrations in orchard renovation and in encouraging farmers to grow garden crops.

In 1914 the Division of Horticulture undertook work in orchard renovation in several orchards of bearing age. Under an agreement with the owner the department furnishes fertilizer, spraying outfits and materials.

Some years ago thirty-five model orchards were set out by the department. These are distributed over the province, outside the fruit districts proper, for the purpose of testing varieties and demonstrating methods of culture. Valuable data has been obtained as a result.

NEW BRUNSWICK

The chief lines of instruction and demonstration work conducted by the Department of Agriculture with the assistance of the grant are those relating to live stock, dairying, horticulture, soils and drainage, poultry, agricultural societies and Women's Institutes. In every case the grant provides the salaries and expenses of the officers engaged in carrying out the departmental policies related to these activities.

Under live stock, the work includes the organization and supervision of bull clubs, sheep demonstrations and the grading and co-operative marketing of sheep and wool, and the organization of boys' pig clubs.

The dairying activities include instructional work at cheese factories and creameries, organization of dairy show, of educational competitions in butter-making, assistance at the Maritime Dairy School, assistance in the organization of co-operative organizations and in grading and marketing dairy products.

Under horticulture, instruction is given in the pruning and spraying of orchards, and in the co-operative packing and marketing of fruit, also the supervision of eleven illustration orchards and eight test orchards.

In the division of Soils and Drainage, drainage surveys are made, and drainage demonstrations given with the assistance of a ditching machine. Forty demonstration pig pastures were undertaken during the year. Also clover-huller, mustard spraying and oat smut prevention demonstrations were carried out.

The poultry branch organized thirty-six clubs for boys and girls with 475 members, besides holding a number of poultry meetings, conducting culling demonstrations and preparing educational exhibits.

The agricultural society work is largely educational, including organizing, lecturing, the promotion of co-operative effort and the supervision of field crop competitions.

WOMEN'S INSTITUTES

Canada is the birthplace of Women's Institutes. Twenty-two years ago, a little group of countrywomen in Ontario met to discuss the question of lightening the loneliness and comparative isolation of farm life. They thought that something could be

SESSIONAL PAPER No. 15a

done to make life better and brighter both for themselves and their children. They met at each other's houses at fixed intervals, not only for social entertainment but also for devising means to secure the various improvements their homes and the district required. Thus the Women's Institute came into being.

Very soon the homes and the farms showed what changes could be accomplished through the efforts of an organized band of intelligent women. This example inspired other women, and before long the Institute movement had spread through other provinces of Canada, and thence into the United States. In 1915, it reached Great Britain, by way of Wales, where Mrs. Watt, a British Columbian, started the first Women's Institute.

The Women's Institutes of Canada, with a combined membership of 70,000 persons, form the medium through which the farm home may be reached and influenced by various forms of social welfare propaganda. They are the medium for conveying instruction in household science and domestic art, cooking, nutrition, home nursing, sanitation and similar topics. They afford the women of the farm an opportunity for social intercourse, self-expression and development, often so much needed under rural conditions. Matters relating to social welfare, community welfare, education and other vital topics are considered and discussed, and the activities promoted by their means have a widely extended and highly beneficial influence.

In all the provinces, with the exception of Ontario and British Columbia, the grant meets the cost of organizing and carrying on the work of the institutes. In Ontario, however, the money is employed solely in connection with extension propaganda, being employed in meeting the cost of instructional work in household science and related subjects. Demonstration lectures and classes in cooking, canning and preserving, sewing, hygiene and other topics of special interest to women are held under the auspices of the Women's Branch Institutes, 900 in number, having a total membership of about 30,000.

The organization of Young Women's Clubs among the French-speaking population shows continued extension. From eight that were in existence three years ago the number has increased to thirty-seven with a membership of 1,907. The clubs are designed to promote a knowledge of gardening, poultry, bee-keeping and other useful occupations among young women in rural communities. Lectures on home economics and various other topics are included in the programme of instruction.

The Quebec Homebakers' Clubs, 45 in number, come under the supervision of the Household Science Department of Macdonald College. The work of these organizations continued during the year with unabated interest. Besides following various courses of study as outlined for them, the clubs interested themselves in community needs, including the providing of equipment for school lunches, donating prizes to school fairs and in contributing to the cost of school and community halls and their equipment. The work is not only of particular aid to the home but of telling value in the community generally.

The Women's Institutes of the province of Manitoba held twelve district and one provincial convention during the year to which speakers were supplied by the local department. Under institute auspices, five-day courses were held to the number of 190 in home economics, 110 in dressmaking and 90 in millinery. In canning and cooking, 325 individual demonstrations were given.

	1914.	1919.
Number of institutes.	17	120
Membership.	750	4,800

The Women's Institutes of Saskatchewan number 180 and have a total membership of 5,000. The Director of Women's Work, who operates from the College of Agriculture of the University, has charge of the management. A provincial convention is held annually.

11 GEORGE V, A. 1921

The membership of the Alberta Women's Institutes was increased to over 12,000 during the year, thirty-two new branches being organized, making a total of 265.

Lecturers and demonstrators were sent out to practically every Institute in the province. Short course schools in home nursing and first aid were given at fifty-four centres, with a total attendance of 3,409. These courses were given by Public Health nurses. Sewing demonstration lecture courses were also given at twenty-two centres and short courses in cookery and food values at sixteen. One hundred and sixty-eight institutes were visited and addressed by Women's Institute speakers. The subjects treated were of particular interest to women. The total attendance at lectures and courses was 21,000 women.

Nineteen constituency conferences have been held and found helpful in developing leadership and creating a fellowship through the sense of common interest.

An important feature of the work for 1919 was its campaign for the proper feeding of children. This was carried out by food exhibits at the Edmonton and Calgary fairs. Forty thousand bulletins dealing with child welfare, and the canning of fruit and vegetables, were distributed.

In connection with the better school movement, dozens of institutes elected educational committees to do work similar to that of the parents-teachers' associations. The work of the institutes was felt mainly in connection with sanitation and hygiene and aesthetic culture. In a number of cases, playgrounds were equipped, school lunch apparatus furnished. Twenty-five institutes gave prizes to students for various types of merit. One branch completely furnished a domestic science kitchen, while another donated \$100 worth of books to the local school.

The Women's Institute movement in Nova Scotia dates from the summer of 1913 when the Dominion grant became available for financing the work. In that year fourteen branches were organized. In 1919 there were fifty-five active branches with a membership of 7,000. The supervision of the work is in the hands of a superintendent and an annual grant of five dollars is made to each institute.

The Women's Institutes of the province of New Brunswick number 132 and have a membership of 5,000. Eight short courses in cooking, sewing and nursing were held in the English-speaking districts and four in the French. Demonstrations were given at the summer meetings of the institutes, and a provincial convention was held.

At present there are thirty-four active institutes in the province of Prince Edward Island, with a total membership of 750. The supervisor and an assistant have charge of the work. A small annual grant is made to each institute and the expenses of delegates to the yearly convention at Charlottetown are paid. Short courses are held during the winter months for the benefit of girls and women from the rural parts of the province and lessons in cooking are given in the Charlottetown public schools.

COLLEGES AND SCHOOLS OF AGRICULTURE

When in 1912, the federal authorities determined to place public moneys at the disposal of the provinces for the benefit of agriculture, it was at once recognized that a portion of the fund might with propriety be employed in increasing the efficiency of the agricultural colleges. It was accordingly agreed that the grant might be employed in enlarging their capacity, strengthening their staff and adding necessary equipment, according to their individual needs, so that they might the better serve the purpose for which they were established. Under the Agricultural Aid Act of 1912—a preliminary measure—the sum of \$106,288 was devoted to this purpose. In each province except Saskatchewan this grant was devoted to building extension and equipment. In 1913-14 the original Act was superseded by the Agricultural Instruction Act. Under the latter, the policy of assisting the agricultural colleges was continued. But in the case of Alberta, it was decided, in accordance with the desire of the provincial authorities, to assist in the maintenance of three district agricultural

SESSIONAL PAPER No. 15a

schools established in that province rather than to contribute to the College of Agriculture. Likewise in the province of New Brunswick, where no college existed, a building was provided at Sussex for an agricultural school, while at the Fisher Vocational School at Woodstock provision was made for giving instruction in agriculture. In Prince Edward Island the assistance took the form of amplifying the agricultural course at Prince of Wales College. This course was later on developed as a rural science department in connection with the movement to establish the teaching of elementary agriculture in the schools.

It is encouraging to know that, from Ontario westward, every province in the Dominion now has an agricultural college, established and maintained at the public expense, for the purpose of preparing men to become either practical farmers, or instructors, scientific investigators and leaders in connection with the basic industry of agriculture.

In the east a similar service is being rendered by the Macdonald College, an institution established as a private bequest, but receiving aid from the public treasury, and by the Agricultural College at Truro, Nova Scotia, the latter serving the needs of the Maritime Provinces. Quebec province has in addition two institutions designed to afford instruction in agriculture to French-speaking Canadians, namely, the Agricultural schools at Oka and at Ste-Anne-de-la-Pocatière.

TOTAL ALLOTMENT, 1912-13 TO 1919-20

The following sums have been allocated to colleges and schools of agriculture (exclusive of veterinary colleges) under the Agricultural Aid Act and the Agricultural Instruction Act during the period 1912-13 to 1919-20:—

Province.	Agricultural Instruction Act.	Agricultural. Aid Act.
Ontario.. . . .	\$691,313	\$40,000
Quebec.. . . .	483,819	20,000
Saskatchewan.. . . .	160,276	15,000
Alberta.. . . .	261,200	—
British Columbia.. . . .	20,000	—
Nova Scotia.. . . .	207,683	—
New Brunswick.. . . .	65,852	—
	<hr/>	<hr/>
	\$1,890,143	\$106,288
	106,288	
	<hr/>	
Total.. . . .	\$1,996,431	

A summary follows of what has been accomplished by means of federal aid under the two Acts cited, for the development of these institutions.

Ontario.—At the Ontario Agricultural College, to meet the steadily growing demand for increased building accommodation, there have been added a field husbandry building, a poultry building, a physics building and a new residence (now under construction). Federal funds were also used in the completion of the dairy barns, and in the reconstruction of the bacteriological building. Numerous staff additions have also been made.

Quebec.—Macdonald College is assisted by an annual grant from agricultural instruction moneys. None of the money being required for building purposes, the grant has been employed largely in extension work in the English-speaking districts, including school agriculture, women's work, orchard, poultry and sheep demonstrations, while a part has been used to carry on various lines of research.

At the Agricultural Schools at Oka and Ste. Anne-de-la-Pocatière increased building accommodation and equipment have been provided, and at each of these institutions the salaries of the staff have been supplemented from the federal grant

11 GEORGE V, A. 1921

Saskatchewan.—The grant to the Saskatchewan College of Agriculture led to the development of a wide range of extension activities by that institution, besides augmenting the staff for teaching and for investigation and research work. None of the funds have been made use of for building purposes.

Alberta.—The federal grant to the province of Alberta does not assist the College of Agriculture, but is employed instead in financing the schools of agriculture, contributing towards staff salaries, supplies and equipment. Short courses and other extension activities are carried on by the schools.

British Columbia.—In 1918-19, Instruction Act moneys were allocated for the first time to the newly-organized College of Agriculture of the University of British Columbia. The grant, which was continued in 1919-20, is made as a contribution towards the cost of investigation and extension work at that institution.

Nova Scotia.—With the assistance of the federal grant, the Nova Scotia Agricultural College was enabled to enlarge its main building and to provide a science building, costing over \$100,000, which is to be paid for in annual instalments. A considerable sum is used annually in supplementing staff salaries. By these means the efficiency of the college as a teaching institution has been greatly increased.

SCHOOLS OF AGRICULTURE

In agricultural schools Alberta has been the pioneer. In that province the three schools already established, although handicapped by the war, have been an undoubted success. Three more are nearing completion and will, it is expected, be open for students in the fall of 1920. By that time it is expected that the students in attendance will number from 750 to 900, which may be regarded as reasonably good in a province that perhaps has the third smallest population in the Dominion.

The experience of Alberta is that many farm boys and girls can be induced to attend schools of this kind who for certain disabilities could not attend an agricultural college. Nevertheless it is anticipated that these schools will lead many to take a college course in agriculture and thus prove a recruiting ground for the college of agriculture.

The school at Kemptville, in Ontario, is similar to the Alberta schools in its scope and intention. The Kemptville establishment will constitute a vocational residential school, with ample land for farming purposes attached, together with the necessary buildings and other equipment. The cost is financed entirely from the Agricultural Instruction grant. The main school building is now completed, and the regular two years' course in agriculture and household science will commence in the autumn of 1920. Pending the completion of the school, short courses in agriculture and household science are being offered.

ELEMENTARY AGRICULTURAL EDUCATION

GENERAL REVIEW OF THE SITUATION

That serious deficiencies existed in the general scheme of education as applied to country children has for a long time been conceded. It has been claimed very generally that the schools were training children both through the matter taught and also in the manner of teaching it, to take advantage of town opportunities while country opportunities were ignored, thus leading to rural depopulation. It seems doubtful whether such a claim can be completely substantiated. All are ready to agree, however, that rural education should be adapted to the social and vocational needs of rural people, and should be made both broadly cultural and broadly practical.

SESSIONAL PAPER No. 15a

and it is generally conceded that an appreciative study of nature and of country life should be fundamental, leading in the higher grades to vocational instruction in agriculture and home-making.

The problem facing those responsible for educational policy is to provide adequate educational opportunities for those destined for country life. This involves not only the strengthening of the rural school but the provision of such facilities as would afford the knowledge, the mental training and the general outlook needed for the development of a modern, scientific, organized agriculture.

It also involves the provision of facilities for teaching agriculture as a vocation, just as facilities are provided for the town boy and girl who desires technical instruction in the arts and crafts. That vocational training for life on the farm be placed within the reach of every country boy and girl is one of the most urgent needs of the present day in order to insure the rapid growth and permanent prosperity of Canadian agriculture. This need the centralized college of agriculture cannot hope to meet. Attempts of various kinds are being made to meet it both by Departments of Agriculture and of Education. These include special schools of agriculture, part time schools, high and consolidated schools with agricultural departments, the classes conducted by agricultural representatives, boys' and girls' clubs and similar efforts.

If the farming community generally realized the great benefits resulting from vocational agriculture, and the increasing need for applying scientific knowledge to agricultural operations, there is little doubt that there would be a universal demand for this form of instruction either through special schools or through recognized educational channels, or both.

For the promotion of school agriculture more money was requisite than most provincial departments of education could command. It was therefore decided that the grant might be employed, if the participants so desired, in assisting to finance elementary agricultural education in the schools.

Since the Act became effective, all the provinces have made progress in the introduction of this form of instruction. This does not necessarily mean teaching that is intended to be directly vocational in its object. What it involves is a recognition of the principle that the objects most intimate to the life of the rural child should be made the medium of instruction. It begins in the lower grades with what is termed nature study, or rural science, and involves a gradual progression through elementary agriculture to an acquaintance with the sciences that have a definite relationship to agricultural pursuits, and opens the way to specialization in various fields of usefulness.

For the advancement that has been made in the direction of agricultural teaching the grant is largely accountable. Besides providing special vocational schools and strengthening agricultural colleges it has assisted liberally in the training of teachers, in the introduction of nature study, school and home gardening, boys' and girls' clubs and the school fairs. In regard to the latter forms of work, it may safely be stated that no other form of agricultural instruction work brings such apparent and immediate results as that carried on through the medium of the young people through the efforts of Departments of Agriculture and Education.

Practical projects such as poultry keeping, potato-growing, pig and calf rearing, canning, breadmaking, and similar activities are easily made the medium for training the intelligence, because being actualities they are seized upon with eagerness by most boys and girls and the instruction based upon them is assimilated, remembered, and applied, in contrast with the routine lecture which remains unrealized and is soon forgotten.

The school garden has been widely adopted in all the provinces as a basis for agricultural teaching in the schools. The home garden and the home project, such as the rearing of poultry, constitute an outward extension of the same idea. The school garden is regarded as an outdoor workshop or laboratory to be made use of by the

11 GEORGE V, A. 1921

teacher in the general education of the pupil. It is a place for doing experimental work, making observations and recording results. To boys and girls gardening is largely experimental. The knowledge required is gained at first hand as a result of the pupil's work and observation. It is, therefore, much more interesting and much more real than the knowledge gained from books.

Space will not permit even the briefest consideration of how school subjects, such as reading, spelling, composition, nature study, geography, arithmetic, drawing and all the rest can with advantage be correlated with school gardening. The garden and the experience gained therein become the great centre of reality for the child. These other subjects merely result from the different types of reaction and expression of the child mind. They are the "tools" that the child must learn to use in fashioning the "raw materials" which he daily and hourly acquires through experience or sense-perception, and each is useless without the other.

The school fair is a logical outcome of school and home gardens and the boys' and girls' club development. At these fairs are exhibited the grain, roots and vegetables grown from the seed supplied, and in accordance with instruction given. Settings of eggs are distributed and the resulting fowls are exhibited. The poultry section of the school fair has become a very attractive feature with both boys and girls. Children are also encouraged to exhibit calves, colts and pigs. Canning, baking and similar competitions are introduced for the girls. Sometimes such spectacular competitions as chicken-plucking contests, athletic sports and concerts add to the interest. As a rule, the school fair is separate and distinct from the county organization, the intention being to have the boys and girls regard it as exclusively a children's organization. Prizes are offered for the various exhibits and competitions, and the movement is generally of great value in stimulating school and home garden development.

Club work for boys and girls has proved to be one of the most important lines of endeavour yet undertaken, so far as stimulating interest in agriculture and imparting information in approved methods and practices is concerned. The work is usually controlled and directed through the Department of Agriculture and is related to vocational rather than scholastic training. If club work is to take an important place in an educational way it would appear to be necessary to connect it with the work of the schools. This is in some provinces being successfully accomplished. The answer to the question as to whether such activities should be directed by the educational or the agricultural authorities depends on the facilities available for its successful prosecution. There should at least be close co-operation between the two. The practical aspects of these undertakings are of great importance, and they require for success the supervision of those having considerable technical knowledge such as the school teacher does not as a rule possess. The acre profit and kindred projects carried on by the Ontario Department of Agriculture may be instanced as affording an illustration of what may be accomplished in an educational and vocational way by competitions. Under the direct supervision of the agricultural representative they afford the young men taking part in them an opportunity to put into practice, under normal conditions, the precepts taught at the local classes conducted by these officers. No school teacher, unless well qualified to teach agriculture, could give the required instruction and supervision. At the same time the projects referred to would appear to meet fairly well the requisite conditions, which are that they should be associated with instruction, be conducted on business lines, involving record and report, and should have a profit incentive in view.

One of the first requisites of the successful teaching of elementary agriculture in the schools was the provision of courses of training for teachers. To meet the necessities of the case, special summer courses were provided and special inducements offered to teachers to attend them. In this connection the funds available under the Act rendered important assistance. By means of such courses numbers of inspectors

SESSIONAL PAPER No. 15a

and teachers have been instructed in the elementary principles of agriculture without which it would have been impossible for them to deal with the subject. In the normal school courses provision has also been made in most provinces for similarly equipping those proposing to enter the teaching profession.

A recent progressive development in connection with the teaching of agriculture has been the introduction of agricultural and household science departments in high schools. This project is meeting with success in a number of instances. In Ontario the case of the Whitby High School may be cited as an example. In this school the principal was himself deeply interested in the undertaking, and such an attitude on the part of that officer may be regarded as a pre-requisite of success. At the Whitby school it was found to be necessary, in order to build up the department, to popularize the teaching of agriculture in the schools of the district it served. Accordingly steps were taken to place before the people fairly the status of agriculture in the present system of education. The publicity campaign that resulted has been continued for over three years. Any opposition that existed on the part of the farmers was found to be based on lack of information or misunderstanding of the scope of the work. Many of the most strenuous opponents have since become ardent supporters of the project.

The agricultural department of the Whitby school, in common with several other such schools, is now undertaking actual extension work among the farming community. The assembly hall, laboratory and motion picture outfit have been made available for demonstrations and lectures. As a result the community is learning to look upon the high school as an educational centre for themselves as well as for their children. The outstanding result of this excellent work is that many more children from the rural district are coming to the high school, not being satisfied, as formerly, with merely a public school education.

School consolidation is being promoted in several provinces, but generally speaking the movement advances slowly. That many rural schools as at present constituted are excellent within their prescribed limits will not be denied. But, good or bad, they do not provide those dependent upon them with more than the rudiments of an education. That this is entirely insufficient to meet the present day needs of the farming business will be freely admitted by those familiar with the wide range of knowledge that the farmer should have at his command.

Agriculture gives scope for the mental faculties in a wider field than most callings. Nevertheless, scientific agriculture is a term that still arouses a species of resentment in the minds of some who have not learned to discern the relationship of the sciences to farming operations. They still labour under the delusion that the training of the hand and the general knowledge of reading, writing and arithmetic gained at the rural school is sufficient equipment for their needs.

To secure adequate rewards for his toil, the man who tills the soil must call to his aid all the ascertained facts in relation to agriculture. He must know for example, how to maintain the fertility of his land, how to improve the yield of his crops through seed selection and the employment of the most suitable varieties, how to breed and feed his live stock so as to secure the greatest return at the smallest cost. In no other way than by the application of scientific or exact knowledge can the land be made to produce to its capacity. The words of the Greek philosopher of two thousand years ago are as true to-day as they ever were: "Agriculture is an art that renders those who understand it rich, but leaves those who do not understand it, however hard they labour in it, to live in poverty."

Probably there is not a rural school, no matter how good, that could not be improved by consolidation, where consolidation is feasible. Consolidated schools are no experiment; there is no question as to their efficiency; the cost in terms of service cannot compare with what some sections are now paying. Consolidated schools can

11 GEORGE V, A. 1921

bring the country all the advantages now possessed by urban public and high schools, and can in addition become an effective instrumentality for redirecting and vitalizing country life.

As a whole the farming community is unconvinced of the importance of improving rural educational facilities. These must be improved before any marked advance can be made in agricultural conditions. This state of public opinion is indicated by the niggardly policy often adopted towards school expenditures, by the indifference displayed towards agricultural teaching, and by a lack of appreciation of the benefits that might reasonably be expected to flow, under suitable conditions, from the policy of school consolidation, the provision of high school courses in agriculture, of special vocational schools of agriculture, and of ample facilities for the training experts in all lines of agricultural endeavour.

JUNIOR EXTENSION WORK, INCLUDING SCHOOL AND HOME GARDENS, BOYS' AND GIRLS' CLUBS AND SCHOOL FAIRS

ONTARIO

In 1919, some 1,500 public and separate schools conducted classes in agriculture and qualified for grants. The progress made is indicated by the fact that in 1914 the number of schools qualifying was 264, with 208 school gardens and 56 home gardens. In 1918, 1,020 such schools qualified with 588 school and 432 home gardens. In 33 high schools agriculture has been introduced as an optional subject, as compared with 11 in 1914.

The school garden, as now understood, is tending to become a permanent part of the school accommodation of Ontario. The number of schools undertaking school garden work is increasing steadily year by year, as indicated by the following figures: 1914, 208; 1915, 222; 1916, 324; 1917, 466; 1918, 588; and 1919, 700 (approximate). Usually the school garden forms a part of the regular school property, but, as might be expected, there is a considerable number of gardens on land secured only temporarily. In very many cases the land was loaned to the school board free of charge. The spirit shown in such acts as this demonstrates more than words the trend of the school garden movement.

The first school fair was organized in 1909, with three schools taking part. Ten years later, 357 rural school fairs were held in the province and the pupils had 69,848 home plots and made 111,823 entries. It is estimated that about 250 people saw the first school fair in which 58 pupils took part, while in 1919, 92,600 children and 107,590 adults attended the school fairs in Ontario—a remarkable growth. Some excellent exhibits were made this year in the manual training classes, the boys taking great interest in this class of work.

During the year 1919 the Ontario Department of Agriculture, through its agricultural representatives, distributed seeds and eggs to 78,946 pupils in 3,278 rural schools of the province. These figures give some idea of the magnitude of the school fair movement in Ontario.

QUEBEC

The teaching of agriculture in the schools of the province of Quebec is aided annually from the Agricultural Instruction funds. The allotment is applied as follows:—

- (1) For the promotion of school and home gardens, boys' and girls' clubs, school fairs.
- (2) For special lectures to pupils and parents on elementary agricultural education, including Normal school lectures and demonstrations.
- (3) For special courses in elementary agriculture for school inspectors.

SESSIONAL PAPER No. 15a

In addition to the above, \$10,000 is distributed to domestic science schools and to institutions giving special courses in domestic science.

In the rural districts of Quebec province, the home garden has been substituted for the school garden. These numbered 22,734. In the towns and villages there were 374 school gardens, and the total number of young gardeners was 27,326. The gardens were under the direction of the 33 agricultural representatives of the provincial Department of Agriculture.

Short courses for school inspectors are held at the School of Agriculture, Ste. Anne de la Pocatière, at the Agricultural Institute, Oka, and at the Macdonald College. Instruction is given in general agriculture, horticulture and poultry work. The inspectors instruct teachers and also lecture on school gardening in the primary schools.

The Quebec Department of Agriculture supplies special lecturers in agriculture to instruct pupils of the twelve normal schools. Each of the normal schools has a demonstration garden and poultry plant.

The management of the school fairs of the province is in the hands of the agricultural representatives. The classes of products exhibited included, this year, the pigs and calves reared for the competitions organized among those attending the courses conducted by the representatives.

Macdonald College Fairs.—During the year 1919, the Quebec Provincial Department of Agriculture assumed full control of all school fairs for French children, so that Macdonald College rural school department assisted the provincial demonstrators only in the organization of fairs for English children. Assistance was given to all demonstrators who held English fairs. Altogether, twenty-five English fairs were held in the province, the cost of the work being met from the grant made to the College by the Provincial Government from Agricultural Instruction funds.

The total number of children receiving seed last spring in order to take part in these twenty-five school fairs was 5,983. All the seeds and eggs, with the exception of sweet corn and potatoes, were provided from Macdonald College. In addition, judges were supplied by the college for each fair.

During the year the household science demonstrators from Macdonald College continued the work they have been carrying on for a number of years in connection with school fairs, giving many demonstrations to rural children in cooking and sewing. Practically all the children in the province who take part in the English school fairs have now received demonstrations in these subjects. At many of these centres lectures and demonstrations were given to the boys by one of the members of the rural school department.

In the province of Quebec "Junior Breeders' Clubs" have been organized through the agricultural representatives and the co-operation of the banks. The purpose of these clubs is to interest the young people in the rearing of live stock, and to familiarize them with book-keeping and banking. The stock is exhibited at the local exhibition, the prize money being provided by the department.

MANITOBA

In this province an arrangement has been made between the Departments of Education and Agriculture whereby boys' and girls' clubs and school fairs are carried on co-operatively. The territory in charge of each school inspector is taken as the unit for organization purposes, and the inspector is recognized as the natural club leader for his district. He decides where fairs are to be held, and arranges them in circuits. He is present at all of the fairs, and either judges the school work or arranges for competent judges to take his place. The agricultural representatives, who are all familiar with club and fair work, assist teachers as desired, and the Extension Service provides from two to five judges for the agricultural and home economic exhibits.

11 GEORGE V. A. 1921

In 1919 there were 220 central clubs, 1,200 branch clubs, and 26,500 members. Practically all of the clubs held fairs, and although over 60 per cent of the clubs encountered wet weather, the attendance of adults was over 30,000, and children over 35,000.

The Manitoba boys and girls in 1919 reared 887 pigs, 871 calves, 356 sheep, 255 colts and 4,433 chickens. Cookery and gardening occupied the attention of many girls and boys with the result that in cookery there were 9,792 exhibits as compared with 9,433 exhibits of vegetables. In the matter of vegetable canning Manitoba boys and girls have a distinguished achievement to their credit. Among the various projects canning stood third with nearly 5,000 exhibits. The showing of over 1,000 dairy exhibits suggests that dairying is receiving a great deal of attention.

During July and August ten-day short course classes in woodwork were held at fourteen places in co-operation with local trustee boards, and most of the 1,600 woodwork exhibits can be traced to these schools. There was a marked improvement in the record-keeping work in 1919 both in neatness and in the number of records, over 2,250 being shown at the various fairs. School work has always been a very important feature at the club fairs and during the year there were entered about 28,000 exhibits of actual school work. Of the 30,000 club members fewer than 2,000 failed to carry their work through to a successful conclusion and have exhibits at the fairs.

SASKATCHEWAN

Under the impetus given to elementary agricultural teaching through the Dominion grant for agricultural instruction certain definite results have been accomplished in Saskatchewan. In 1915, directors of school agriculture were appointed, and since then the various phases of agricultural instruction have been kept constantly before the public. By means of short courses, summer schools, special lectures at Normal schools, teachers' conventions and institutes and the issue of bulletins, a better understanding of the subject has been brought about. The School Agriculture branch of the Department of Education embraces activities connected with the teaching of agriculture in the public and high schools, school gardening, the beautification of school grounds, the training of teachers in the Normal schools in nature study and agriculture, the school exhibition work of the province, the rural education movement and boys' and girls' clubs.

For the high school a very definite and practical curriculum in agriculture has been prepared, designed to meet the needs of boys and girls who intend to remain on the farm and to give an agricultural and home economics content to the holders of teachers' certificates.

The instruction given through special agricultural courses is intended to help the many thousand young people in Saskatchewan who have not reached grade VIII and cannot enter high school, though they are beyond the age and scope of influence of the public school. While the practical instruction contributes valuable information, the effort is rather to broaden the entire education of the student through agriculture of a practical nature.

A summer school for teachers is held annually at the University of Saskatchewan. Teachers of agriculture are also assisted in a practical way through correspondence, visits to schools, addresses at teachers' conventions, illustrated evening lectures, and contributions to publications. A series of lectures in nature study and agriculture was given at each of the third-class Normal centres while similar work was provided at the first and second-class sessions.

Government co-operation in tree-planting and school ground improvement is another activity of this branch. Arrangements were made in 1915 with the Forestry Branch of the Department of the Interior for the supplying of free trees for shelter

SESSIONAL PAPER No. 15a

planting on school grounds. The Provincial Nursery provides a supply of perennials and flowering shrubs for school ground improvement. Many districts receiving trees have also been assisted in school ground planning.

An interesting and valuable phase of work has been carried out in the boys' and girls' section of the Better Farming Train. In co-operation with the chief game guardian of the province, a special programme, consisting of lantern lectures on birds and animals was provided. The record of attendance shows that sixty points were visited at which a total of 11,670 school children, attending 388 schools, saw the train. There were 327 teachers also in attendance.

The boys' and girls' club work, which until recently was under the direction of the Extension Department of the University of Saskatchewan, has been transferred to the Department of Education and is now organized in direct connection with the School Exhibition system and the Rural Education Association movement. Early in 1919, a bulletin was issued giving general directions for the guidance of such clubs. Wherever Rural Education Associations exist, the clubs are organized under that auspices. The work, which is vocational in its aim, consisted of competitions in calf, colt, pig and poultry rearing, potato growing, gardening, canning, and judging. The enrolled membership was 2,034, and the total number of exhibitors 1,920.

In accordance with the policy originating with the Agricultural Instruction Committee, school exhibition work was, in 1915, placed under the direction and control of the Department of Education.

In this province where the value of education through agriculture is being more emphasized and better understood, school and home garden work is given an important place while agricultural projects such as poultry rearing are not neglected. Household science and manual training are subjects of study in the schools and therefore receive a large share of attention at the school fairs, but the competitions are not always confined to class-room activities. The exhibition programme is very broad, and aims at making the event a true expression of the school throughout the whole range of its activities, together with certain other subjects having to do with community betterment. As a result the outstanding characteristic of the year's work has been the increased interest shown alike by the general public, teachers and pupils.

The Rural Education Association has proven the most satisfactory organization for carrying on this work. There are 120 Rural Education Associations in Saskatchewan, 105 of which conducted successful school exhibitions. In several inspectorates the whole territory is organized into such associations and a common prize list used. In a number of inspectorates a central exhibition is held at which the prize winning exhibits from the locals are shown.

The following table shows the development of the school exhibition in Saskatchewan. A large number of agricultural societies do excellent work in providing opportunities for children to exhibit at the regular summer and fall fairs. These, however, are not included:—

Year	Number of Exhibitions reported.
1914.. .. .	14
1915.. .. .	42
1916.. .. .	84
1917.. .. .	129
1918.. .. .	175
1919.. .. .	202

During the year special efforts have been made to assist in developing community programmes. The library of lantern slides has been further extended. There are now available for loaning purposes some sixteen sets of seventy to seventy-five slides each, with sufficient descriptive matter to make it possible for any one to develop a good

11 GEORGE V, A. 1921

lantern lecture. These sets have been sent out on request to a large number of points and are rendering excellent service as a means of entertainment and instruction in the rural communities.

A summary of the work carried on during 1919 shows that over 200 school exhibitions were held, 44 Rural Education Associations were formed, making a total of 118 in operation at the close of the year, over 200 public addresses were given, judges were provided for 175 exhibitions, 20 conventions and teachers' institutes were visited, 1,170 teachers in training were instructed in various phases of school agriculture, 2 short courses in agriculture were held at the summer school for teachers, 53 school districts were provided with trees and a large number of schools were visited, in addition to the assistance given through correspondence and by the distribution of bulletins and circulars prepared by the department.

In 1915 a branch of the Department of Education was organized under a director for the development of household science in the schools. The work developed until, in 1919, the staff consisted of five members in addition to the household science teacher at each of the two Normal schools. The activities connected therewith consist in assisting rural schools in establishing the noon lunch, instruction of teachers at Normal schools, assistance at school fairs, instruction at the summer school for teachers and special short course.

ALBERTA

The Department of Agriculture for Alberta has not developed club work to a very great extent. The work that is being done for Alberta boys and girls is accomplished by using the school organization for gardens and live-stock enterprises and giving directions in the schools with regard to these activities.

Under the direction of the three agricultural schools there were held 40 fairs, which included 440 schools and 6,500 pupils. In all classes there were approximately 25,000 exhibits. The agricultural schools, with funds provided under the Agricultural Instruction Act, supplied seeds, printing and judges.

The school fairs are based chiefly on the school garden work. In a number of the school fair districts in which the teachers of the agricultural schools carry on extension work, and also where the three agricultural representatives of the Department of Agriculture are operating, school clubs were organized for the rearing of poultry, calves, colts, and pigs. During the past year each of the agricultural representatives, in co-operation with the poultry branch of the Department of Agriculture, undertook the organization of a number of school poultry clubs. The work was entirely new to parents, pupils and teachers, but it has met with a most enthusiastic support from all. Eggs from pure strains were supplied for hatching, and the district agents as far as possible gave personal instruction and direction in the hatching, rearing and management of the young chicks. This was followed later in the season by instruction in the winter management of the flock. The popularity and success of the poultry clubs have been such that an extension of the work is being planned for the ensuing year.

BRITISH COLUMBIA

The introduction of nature study and school gardening is helping to stimulate the evolutionary movement in the direction of applying sound pedagogic principles to every-day practice. Year by year teachers are achieving better results in the correlation of nature study with other school subjects. School and home gardening is being used more intelligently, and pupils are coming to enjoy the nature study part of their work. The success of this branch as of other branches of study, rests with the teacher. Not only is improvement shown by the teachers in their work, but also a growing determination to secure the training necessary through the special summer courses in elementary agriculture provided with that object in view.

SESSIONAL PAPER No. 15a

Seven district supervisors of agricultural instruction have already been provided in this province. Their duties are to give a course in agriculture, extending over two years to high school students and to assist the public school teachers in adjacent rural districts in carrying out a course of instruction in elementary agriculture and school and home gardening. They are also required to conduct extension or continuation classes in agriculture during the winter months for those who are no longer attending school. The supervisors are also available for advising with farmers in regard to agricultural problems. In the latter sphere they act in co-operation with the Department of Agriculture which department in consideration of such services, provides transportation facilities and office accommodation.

School fairs in British Columbia represent the co-operation of three agencies, the Department of Education, the agricultural societies and the school boards. They are usually held in conjunction with regular school fairs. In the districts served by district supervisors of agricultural instruction the best results have been attained. In addition to the school garden, school contests in crops and live stock are being encouraged with gratifying results.

NOVA SCOTIA

Ten travelling teachers in elementary agriculture now devote all their time to the work in Nova Scotia under the Director of Rural Science. The function of these teachers is really that of an organizer rather than a teacher. Rural science has developed through school gardening to all phases of home-making, including cooking, canning, sewing and community work. The travelling teachers are given a nine days' short course at Truro each year at which all the problems connected with their work are freely discussed.

Grants are no longer made to teachers on account of rural science work, but as an equivalent a larger bonus is allowed those who attend the summer school at Truro. The training school for teachers held annually at Truro has been made more practical and embraces play and sports as well as agricultural and home-making projects.

Nova Scotia reports that 5,000 school children made home gardens in 1919, a considerable increase over the year previous. The report states that at one school the teacher organized her garden into a small township, appointing a manager, road committee, weed inspector, thus teaching a very real lesson in civics.

The year saw a slight increase in the number of school fairs over the previous year. Last year 230 schools exhibited their produce; this year the number was increased to 250. Vegetables still continue to be the main feature of the children's exhibitions.

NEW BRUNSWICK

According to the course of instruction for the New Brunswick schools, nature study and agriculture is a prescribed subject for all schools. Only in schools, however, whose teachers are qualified by attendance at the Rural Science school, where experimental instruction and practical school gardening are carried on, are funds from the Agricultural Instruction Act used. In other schools formal abstract methods chiefly are employed.

The allotment to elementary agriculture is expended as follows:—

- (1) Salary and expenses of Director of Elementary Agricultural Education and of his assistant.
- (2) Teacher training—Expenses connected with the conduct of rural science schools and teachers' winter short courses.
- (3) Grants to teachers and trustees for agricultural teaching subject to the regulations of the Board of Education.
- (4) Expenses connected with school and home gardens and school fairs.
- (5) Printing reports and bulletins, including a monthly leaflet devoted to the promotion of rural education.

11 GEORGE V, A. 1921

In order to qualify teachers to give instruction in elementary agriculture, a rural science school is held each summer at Sussex, lasting for four weeks. This is supplemented by a teachers' winter short course. A full course requires two summer sessions and leads to a certificate. Teachers are paid their travelling expenses.

The Director of Elementary Agricultural Education is connected with the Department of Agriculture. His division conducts the extension work in agriculture, acting in co-operation with the Board of Education.

In most of the schools, home gardens and poultry projects are carried on, all leading to the school fair.

No grants have hitherto been made to high schools for agricultural instruction. Nevertheless many of the high school teachers have taken the rural science school course, and co-operate with the teachers in the lower grades in this connection.

Boys' and girls' club work in New Brunswick has been very popular and the growth has been rapid. Through the Poultry Division of the Department of Agriculture thirty-six clubs were formed, with a total membership of 464. There was distributed, in all, to these clubs in 1919, 12,670 eggs and the estimated actual number of hens now owned by the members is 8,000. These are serving as a source of supply of hatching eggs for the province. Two years ago it was practically impossible to get any bred-to-lay strains in the province. The plan for 1920 is to organize these clubs as centres for securing quantities of hatching eggs for general distribution.

There were thirty poultry club fairs held in the province and birds to the number of 3,500 were exhibited. A number of the club members also exhibited at the larger provincial and county fairs in open competition and won a good share of the prize money in the utility classes at these exhibitions.

PRINCE EDWARD ISLAND

Nature study, including elementary agriculture, is a compulsory subject in the schools of Prince Edward Island. The work is associated with school or home gardens, pig and poultry clubs and school fairs, and is under the general supervision of a Director of Rural Science. A sum is allotted annually to these activities from the Agricultural Instruction grant and expended as follows:—

- (1) Salary and expenses for the Director of Rural Science and assistant. Salaries of four additional school inspectors.
- (2) Maintenance of the Rural Science Department of Prince of Wales College for the training of teachers and for junior extension work.
- (3) Bonuses to teachers for teaching agriculture.

The Rural Science Department of Prince of Wales College was entirely equipped and is being maintained from the grant. It provides instruction in elementary agriculture for first and second year and Normal class students, and supplies the training in agriculture necessary to those who are to teach the subject in the schools. The department is in charge of a Director of Rural Science who supervises school agriculture generally, being assisted by the school inspection staff of eight inspectors, four of whom are paid from the grant. The junior extension work of the department includes boys' and girls' pig and poultry clubs and school fairs. Materials and supplies for work of this kind, including eggs and seeds, are distributed to the schools. A rural science circular is issued.

Grants and bonuses are paid to the teachers for elementary agriculture, the amount depending upon the standard of the work performed and the qualifications of the teacher.

School fairs as a part of the agricultural training in the rural schools were not organized in this province until 1916. As an experiment, four fairs were started.

SESSIONAL PAPER No. 15a

These were so well received by the districts that the following year saw the number increased to fourteen. In 1919 the number had increased to forty. The Department of Agriculture, through the Rural Science Branch, directs the organization. The generous action of the Canadian Bankers' Association in giving \$30 for calves and pigs when exhibited according to their regulations, was highly appreciated and has been of great benefit to the live-stock industry. The competition in dairy calves resulted in the finest exhibit of dairy calves and yearling heifers, all under eighteen months, shown at the Tryon School fair, ever brought together in the province.

The boys who take part in these competitions learn to feed, care for and exhibit and become intensely interested in live stock. The boys of to-day are the farmers of to-morrow, and live stock being the mainstay of agriculture it is felt that, in an agricultural country, every possible encouragement should be given to a form of education that will foster its development.

The efforts of the Rural Science Branch have resulted in the organization, on a fairly extensive scale, of poultry clubs among the pupils of the public schools. To facilitate the work, three large incubators were installed and day-old chicks were ordered far in excess of what the department was able to supply. The boys and girls exhibited their poultry at the school fairs and at the provincial poultry show held at Charlottetown.

FINANCIAL STATEMENTS
STATEMENTS, BY PROVINCES, OF THE EXPENDITURE OF THE GRANT OF 1919-20
PROVINCE OF ONTARIO
THE AGRICULTURAL INSTRUCTION ACT
Grant of 1919-20
SUMMARY STATEMENT, April 1, 1919, to March 31, 1920

No	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expenditure.	Dr. Balance.	Cr. Balance.
		\$ cts	\$ cts	\$ cts	\$ cts	\$ cts	\$ cts	\$ cts
1a	O. A. C.—Capital expenditure.....	137,259 65	40,000 00		177,259 65	95,008 48		82,251 17
1b	O. A. C.—Salaries and expenses, additions to staff—	793 34	15,000 00	300 00	16,093 34	15,174 00		919 34
2a	Kemptville Agricultural School—Capital	4,357 13	45,000 00	39,631 33	88,988 46	80,911 44		8,077 02
2b	“—Maintenance.	36,692 00	15,000 00	11,465 68	63,157 68	21,625 58	1,099 23	
						39,631 33		
3	Agricultural representatives.....	1,213 69	126,000 00	1,870 25	129,083 91	126,870 82		2,213 12
4	Household Science Extension work..	383 57	1,500 00		1,883 57	1,273 75		609 82
5	Co-operation and markets.....	229 66	12,000 00	653 74	12,883 40	9,869 23		1,714 17
						1,300 00		
6	Demonstrations in vegetable growing	455 31	12,000 00	691 63	13,686 25		7 39	
				531 92				
7	Stock and seed judging courses and institute work....		2,000 00	500 00	2,500 00	693 81		1,806 19
8	Women's institute work.....	92 36	5,000 00	1,500 35	6,592 71	6,583 17		9 54
9	Short courses for fall fair, judges..	847 12	5,000 00	25 10	5,872 22	4,440 30		
						1,413 92		
10	Lectures on horticulture.....	562 61	500 00		1,062 61	515 64		546 97
11	Demonstrations in growing and handling fruit	803 65	1,803 26		2,606 91	2,606 91		
12	“ with vegetables in North Ontario	527 80	4,000 00	100 00	5,927 80	4,880 93		1,046 87
				1,309 00				
13	Horticultural Experiment Station....	1,067 86	2,000 00		3,067 86	2,992 46		75 40
14	Demonstration work on soils.....	217 52	5,000 00	500 00	6,617 52	5,970 18		647 34
				900 00				
15	Demonstrations in bee-keeping.....	225 06	1,000 00		1,225 06	557 95		667 11
16	“ in growing corn.....	196 91	3,500 00	100 00	3,796 91	3,094 01		702 87
17	Elementary agricultural education	8,478 80	40,000 00	46 27	48,525 07	40,214 63		8,310 44
1918-19—Drainage work....		2,669 38			2,669 38	2,669 14		24
1918-19—Demonstrations in live stock and poultry.....		2,883 67			2,883 67			2,883 67
1918-19—O. A. C.—Short courses (acre-profit competition)		2,214 53		66 25	2,280 78	900 55		1,380 23
		202,171 62	336,303 26	60,182 52	598,657 40	485,962 51	1,106 62	113,801 51

SESSIONAL PAPER No. 15a

PROVINCE OF QUEBEC

Grant of 1919-20

THE AGRICULTURAL INSTRUCTION ACT

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920

No.	Classification.	Grant.	Expenditure.	Balance Credit
1.	Schools of agriculture.. . . .	\$ 75,000 00	\$ 56,002 59	\$18,997 41
2.	School of Veterinary Science.. . .	5,000 00	5,000 00	
3.	Animal husbandry.. . . .	9,000 00	8,601 06	398 94
4.	Poultry.. . . .	18,000 00	15,769 11	2,230 89
5.	Horticultural and entomological work.. . . .	31,000 00	25,200 55	5,799 45
6.	Experimental and demonstration orchards.. . . .	4,000 00	2,543 77	1,456 23
7.	Dairying.. . . .	5,000 00	3,519 66	1,680 34
8.	Agricultural representatives.. . .	69,000 00	53,669 09	15,330 91
9.	Seed selection, clover-plots and demonstration.. . . .	9,000 00	8,467 23	532 77
10.	Bee-keeping.. . . .	7,000 00	5,993 12	1,006 88
11.	Drainage.. . . .	6,000 00	5,058 50	941 50
12.	Maple industry.. . . .	4,000 00	2,769 93	1,230 07
13.	Short courses and lectures.. . .	9,113 75	9,051 38	62 38
14.	Agriculture in academies.. . . .	8,000 00	7,996 91	3 09
15.	Domestic science.. . . .	10,000 00	4,401 94	5,598 06
16.	School children's exhibits.. . . .	2,000 00	1,994 43	5 57
		<u>\$271,113 75</u>	<u>\$215,839 65</u>	<u>\$55,274 11</u>

MACDONALD COLLEGE

STATEMENT of Receipts and Disbursements for year ending March 31, 1920

April 1, 1919—Debit balance forward.. . . .	\$1,998 66
Receipts—	
Agricultural Instruction Grant.. . . .	25,000 00
	<u>\$23,001 34</u>
Disbursements—	
Animal husbandry.. . . .	\$3,084 23
Biology Department.. . . .	1,117 95
Cereal husbandry.. . . .	2,269 18
Chemistry Department.. . . .	849 96
Horticultural Department.. . . .	367 77
Household Science Department.. . . .	4,671 64
Poultry Department.. . . .	4,115 94
Veterinary science.. . . .	2,113 05
Rural schools	5,253 21
Short courses.. . . .	181 90
General.. . . .	223 58
	<u>24,248 41</u>
Debit balance March 31, 1920.. . . .	<u>\$1,247 07</u>

PROVINCE OF MANITOBA

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920

No	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expendi- ture.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	Agricultural representatives	3,753 46	20,113 11	By Trans. 1,000 00	24,866 57	24,798 16	68 41
2	Dairy work	3,865 11	3,000 00		6,865 11	6,862 96	2 15
3	Poultry work	5,251 42		To Trans. 1,000 00	4,251 42	3,865 65	385 77
4	Boys' and girls' club work	5,297 16	13,000 00	60 00	18,357 16	17,656 15	701 01
5	Short courses.....	156 77	20,000 00	35 00	20,171 77	19,912 96	258 81
6	Home economics.....	914 38	13,000 00		13,914 38	13,710 16	204 22
7	Soil analysis	1,302 80	1,000 00		2,302 80	295 75	2,007 05
8	Bee-keeping	908 97	1,000 00		1,908 97	391 15	1,517 82
9	Killarney Demonstration Farm..	513 48	4,000 00	1,723 84	6,237 32	5,741 41	495 91
10	Contingent and miscellaneous.....	137 39	2,000 00		2,137 39	1,374 92	762 47
		22,080 94	77,113 11	1,818 84	101,012 89	94,609 27	6,403 62

PROVINCE OF SASKATCHEWAN

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920

No	Classification.	Balance April 1.	Grant.	Refunds.	Total Credits.	Expendi- ture.	Dr. Balance.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	COLLEGE OF AGRICULTURE							
1	Staff Salaries, research, etc	5,714 83	21,476 16					
2	Women's work, etc.....	5,500 00	5,500 00		38,190 99	30,666 49		7,524 50
	INSTRUCTION AND DE- MONSTRATION.							
3	Co-operative work, etc.	Dr. 171 20	7,000 00	704 86	7,533 66	9,118 32	1,584 66	
4	Animal husbandry	5,471 05	3,000 00		8,471 05	3,965 79		4,505 26
5	Dairying	7,304 67	3,000 00		10,304 67	5,495 69		4,808 98
6	Field husbandry and weed control.....	2,963 01	5,000 00		7,963 01	7,536 76		426 25
7	Demonstration train.....	1,006 82	7,000 00	122 83	8,129 65	7,047 76		1,081 89
8	Agricultural representa- tives.....	11,874 82	1,476 16		13,350 98	2,445 32		10,905 66
9	Veterinary short courses	724 70	500 00		1,234 70	520 10		714 60
	ELEMENTARY AGRICUL- TURAL EDUCATION.							
10	Agricultural instruction in schools, etc	15,978 80	24,476 16	100 00	40,554 96	25,024 83		15,530 13
11	School fairs	3,957 07	2,500 00		6,457 07	24 95		6,432 12
12	Agricultural scholarships	800 00	800 00		1,600 00			1,600 00
		61,134 57	81,728 48	927 69	143,790 74	91,846 01	1,584 66	53,529 39

SESSIONAL PAPER No. 15a

PROVINCE OF ALBERTA

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20.

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920.

Classification.	Balances April 1.	Grant.	Total Credits.	Expendi- ture.	Dr. Balance.	Cr. Balance.
	\$ cts	\$ cts	\$ cts	\$ cts	\$ cts	\$ cts.
Schools of Agriculture—						
Maintenance.	1,365 32	19,000 00	20,365 32	13,499 32		6,866 00
Equipment	2,623 82		2,623 82	1,712 86		910 97
Special work placing live stock on farms under the Live Stock Encour- agement Act		3,700 00	3,700 00	4,698 20	998 20	
Women's work	89 54	4,700 00	4,789 54	3,735 80		853 68
Agricultural representatives	2,488 48	5,000 00	7,488 48	10,240 00	2,751 52	
Poultry and egg marketing		1,250 00	1,250 00	2,394 45	1,144 45	
Miscellaneous	1,385 09	22 81	1,417 90			1,417 90
Demonstration Farms..	852 29		852 29	408 40		443 89
Publicity	1,517 66		1,517 66	17 90		1,499 76
Interest accrued			531 67			531 65
	19,322 22	33,482 81	44,336 66	36,707 09	4,894 20	12,523 85

PROVINCE OF BRITISH COLUMBIA

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20.

SUMMARY STATEMENT, July 1, 1919 to March 31, 1920.

Classification.	Balance, July 1.	Grant.	Refunds	Total Credits.	Expendi- ture	Dr. Balance.	Cr. Balance
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Instructors and Represent- atives	Dr 5,983 78		100 00	100 00	12,882 69		
Field Crop and Dry Farming	2,056 55	3,000 00	1,723 19	6,779 74	4,608 09		2,171 65
Seed work.....	913 17	1,000 00	464 00	2,377 17	860 20		1,516 97
Field Crop Competition	2,285 00			2,285 00			2,285 00
Silo Demonstrations.....	1,275 16	2,000 00		3,275 16	2,115 09		1,160 07
Drainage Demonstrations...	546 40			546 40			546 40
Horticultural Demonstrations and Competitions	1,961 92	2,000 00		3,961 92	687 87		3,274 05
Fruit Packing and Pruning Schools	1,997 00	2,000 00		3,997 00	228 80		3,758 20
Poultry	13 71	1,000 00	1,339 77	2,353 48	1,944 48		409 00
Dairying	914 91	8,000 00		8,914 91	3,263 15		5,651 76
Bee-Keeping	Dr. 422 06	7,000 00	338 80	7,338 80	6,648 21		268 53
Boys' and Girls' Clubs.	296 18	1,000 00		1,296 18	476 30		819 88
Agricultural Journal and Publications	311 61	6,000 00	106 92	6,418 53	7,567 26	1,148 73	
Pathological and Entomo- logical work.....	77 28	4,000 00	0 68	4,077 96	3,643 25		434 71
Miscellaneous	1,058 49	199 06	750 00	2,007 55	756 51		1,251 03
Agricultural Instruction in Schools	7,031 64	20,000 00		27,031 64	12,917 16		14,114 48
University of British Colum- bia	6,804 76	12,000 00		18,804 76	4,252 74		14,551 96
	27,543 71	69,199 06	4,823 36	101,566 14	69,276 65	19,915 20	52,213 69

Credit Balance, March 31, 1920..... \$32,298 49
Less unpaid half of grant..... 34,599 53

Net Dr. balance \$ 2,301 64

11 GEORGE V. A. 1921

PROVINCE OF NOVA SCOTIA

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20.

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920.

No.	Classification.	Balance April 1.	Grant.	Re- funds.	Total Credits.	Expendi- ture.	Dr. Balance.	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
A1	College, Interest and Sinking Fund, Science buildings..	1,861 44	8,960 00		9,661 44	9,720 90	68 46	
2	College, salaries and in- terference		23,000 00		23,000 00	23,000 00		
B1	Agricultural representatives							
	Dr.	1,378 41	12,000 00		10,621 57	10,399 19		222 38
2	Short courses	144 41	1,000 00		1,144 41	1,028 17		116 24
3	Dairying.....Dr.	696 23	5,018 54	*510 76	5,173 07	6,292 77	859 72	
4	Poultry	26 97	1,500 00		1,526 95	1,769 98	243 03	
5	Bee-keeping and apiary in- spection	155 50	71 30		237 60	237 60		
6	Drainage and soil survey Dr.	23 06	1,600 00		1,574 00	2,288 82	714 83	
7	Soils and fertilizers	511 36	2,118 55		2,629 91	2,320 20	690 29	
8	Field crop	26 50	1,191 61		1,212 11	1,212 11		
9	Fruit growing	6 63	2,000 00		2,006 63	2,041 43	34 80	
10	Women's work	429 72	2,500 00		2,929 72	2,612 18		317 54
11	Extension and work	1,804 13	8,500 00		10,304 13	9,978 78		325 35
C1	Elementary Agricultural Education No. 1	2,887 32						
2	Elementary Agricultural Education No. 2	821 24	12,000 00		15,708 70	13,782 74		1,925 96
	Contingencies	27 60	616 69		644 29	650 98	6 69	
		10,698 42	81,716 69	510 76	88,634 51	88,344 86	2,617 82	2,907.47

* From N.B. and P.E.I. Provincial Governments' share of Dairy School expenses, previously paid from this fund.

SESSIONAL PAPER No. 15a

PROVINCE OF NEW BRUNSWICK

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20.

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920.

No.	Classification.	Balances April 1.	Grant.	Re- funds.	Total Credits.	Expendi- ture.	Dr. Balance	Cr. Balance.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	Agricultural schools— Salaries, etc.....	354 22	1,500 00	34 08	1,888 30	1,206 56		681 74
2	Agricultural representa- tives.....	1,600 27	12,000 00		13,600 27	13,406 01		194 26
3	Bee-keeping..... Dr.	157 42	2,400 00	17 15	2,259 73	2,447 94	188 21	
4	Soils and drainage... Dr.	621 23	5,000 00	263 42	4,642 19	4,726 32	84 13	
5	Horticulture.....	262 11	5,200 00	3 20	5,465 31	5,034 14		431 17
6	Live stock..... Dr.	579 29	4,500 00	By Trans. 18 26 500 00	4,438 97	4,124 50		314 47
7	Dairying..... Dr.	286 62	5,210 80	1,732 99	6,657 17	6,575 31		81 86
8	Poultry..... Dr.	958 80	3,800 00	1,050 01	3,891 21	5,588 12	1,696 91	
9	Entomology.....	206 05	900 00		1,106 05	600 00		506 05
10	Agricultural societies Dr.	40 71	2,800 00		2,759 29	2,918 63	159 34	
11	Women's Institutes.. Dr.	267 93	6,000 00	By Trans. 850 62	6,582 69	8,751 07	2,168 38	
12	Elementary Agricul- tural Education (in- cluding School Fairs), Dr.	870 96	14,800 00	357 22	14,286 26	11,619 94		2,666 32
	1918-19 Short courses....	528 46			528 46	869 65	341 19	
	Fertilizers.....	1,151 54		To Trans. Item 11. 850 62 9 75	310 67	310 67		
	Contingencies and mis- cellaneous.....	438 46		50 95	489 41	350 00		139 41
	Agricultural Schools— Equipment.....	500 00		To Trans. Item 6, 500 00				
		1,258 15	64,110 80	3,537 03	68,905 98	68,528 86	4,638 16	5,015 28

11 GEORGE V, A. 1921

PROVINCE OF PRINCE EDWARD ISLAND

THE AGRICULTURAL INSTRUCTION ACT

Grant of 1919-20.

SUMMARY STATEMENT, April 1, 1919, to March 31, 1920.

Classification.	Balances April 1.	Grant.	Refunds.	Total Credits.	Expendi- ture.	Cr. Balance.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Agricultural Buildings—						
Equipment and Maintenance.....	38 38	1,725 00	.....	1,763 38	1,270 60	492 78
Director and agricultural representatives.....	23 56	5,800 00	.....	5,823 56	4,458 55	1,365 01
Short courses.....	53 31	300 00	.....	353 31	98 97	254 34
Drainage and soils.....	15 49	1,300 00	457 00	1,772 49	1,540 90	231 59
Live stock and dairying....	52 13	3,900 00	47 75	3,999 88	2,556 48	1,443 40
Poultry, bee-keeping, horti- culture and co-operative marketing.....	20 26	1,700 00	110 11	1,830 37	1,185 41	644 96
Women's Institutes.....	414 17	3,510 00	30 00	3,954 17	3,080 27	873 90
Elementary agricultural education.....	30 16	11,500 00	244 68	11,774 84	10,380 36	1,394 48
Miscellaneous and contin- gencies.....	1,886 89	2,014 22	38 65	3,939 76	1,978 69	1,961 07
	2,534 35	31,749 22	928 19	35,211 76	26,550 23	8,661 53

SESSIONAL PAPER No. 15a

GRANT TO VETERINARY COLLEGES

The division of the grant of 1919-20 to veterinary colleges entitled to participate in the \$20,000 allotted to such institutions under the Act was as follows:—

Ontario Veterinary College, 72 students.. . . .	\$14,117 65
School of Veterinary Science, Montreal, 30 students.. . . .	5,882 35
	<hr/>
	\$20,000 00

ONTARIO VETERINARY COLLEGE

STATEMENT of the Dominion grant April 1, 1919 to March 31, 1920.

Balance on hand, March 31, 1919.. . . .	\$ 112 64
Grant, 1915-16.. . . .	14,869 53
	<hr/>
	\$14,982 17

Contingencies — postage, stationery, temporary assistance, etc..	\$3,035 70	
Equipment, library and laboratory supplies, etc. . .	492 37	
Printing and advertising.. . . .	706 28	
Services of lecturers, demonstrators, etc.—		
J. W. Adams.. . . .	\$ 100 00	
J. A. Allan.. . . .	666 64	
H. W. Brown.. . . .	300 00	
H. E. Batt.. . . .	1,950 00	
W. G. Frisby.. . . .	190 00	
W. J. R. Fowler.. . . .	50 00	
T. H. Ferguson.. . . .	150 00	
R. Gwatkin.. . . .	799 98	
F. H. Kirkpatrick	60 00	
R. A. McIntosh.. . . .	1,285 00	
H. D. Nelson.. . . .	1,799 98	
W. L. Williams.. . . .	100 00	
	<hr/>	
	7,452 28	
		<hr/>
		11,686 63
Balance on hand March 31, 1920.. . . .		<hr/>
		\$ 3,295 54

SCHOOL OF VETERINARY SCIENCE, MONTREAL

Dominion grant, 1919-20.. . . .		\$5,882 35
Salaries of teaching staff.. . . .	\$5,829 90	
Incidentals.. . . .	52 45	
	<hr/>	
	\$5,882 35	<hr/>
		\$5,882 35

